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Soybean Rust Overwintering in the South

Daren S. Mueller
Iowa State University, dsmuelle@iastate.edu

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Soybean Rust Overwintering in the South

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By Daren Mueller, Department of Plant Pathology

Despite soybean rust infecting fields in Iowa last fall, the pathogen needs to retrace its steps to get back to Iowa in 2008. The first critical step is for the pathogen to survive somewhere over the winter in places like Florida, Texas or Mexico.

An extensive study on the survival of soybean rust was completed in Florida by W. Jurick, J. Marios, D. Wright and P. Harmon. Their data was presented at the National Soybean Rust Symposium. Some of the main conclusions were:

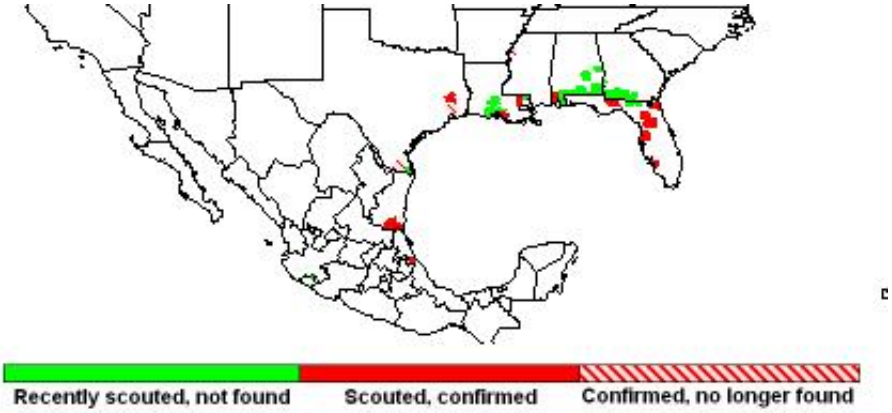
1. Pathogen populations in a kudzu patch are reduced each year and build from low levels of initial inoculum
2. Local survival of the pathogen is dependent on temperature and moisture conditions (they had some kudzu patches die from drought)

3. Protected live vines or dried leaf litter in niche microenvironments may harbor pathogen until favorable conditions for disease occur
4. Pathogen may survive further north than was previously predicted

As spring nears (at least in the South), there have been a couple of noteworthy developments. First, soybean rust continues to survive in kudzu patches in Louisiana and Texas, which are further west than survival in previous years. Second, the ipmPIPE web site has made their service available for Mexican plant pathologists to track soybean rust in Mexico. This winter they reported soybean rust on jicama (yam bean) and soybean in a couple of different locations.

Texas Kudzu, 1-8-08, Photo by Tom Isakeit

Temperatures in the south are beginning to warm, but there is still a chance for more killing frosts. Researchers in the southern states will continue to track the survival of soybean rust on kudzu in the U.S. and jicama and soybean in Mexico. For now, the soybean rust pathogen has survived in expected places (Mexico, Florida, southern Georgia and Alabama) and some unexpected places (central Texas and Louisiana).



March 5, 2008 Rust Observation Map, http://www.sbrusa.net/cgi-bin/sbr/public.cgi

Having this information is critical for the accuracy of the predictive models for the movement of soybean rust during the season. For growers, if soybean rust continues to survive in Mexico, Texas and Louisiana, this means the pathogen has passed the first critical step in getting back to Iowa. The next step will be to build up the inoculum this spring when the soybean plants and kudzu vines begin to grow in the southern states.

Daren Mueller is an extension specialist in the Department of Plant Pathology.

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Author:

Daren Mueller *Assistant Professor*

Daren Mueller is an Assistant Professor and Extension Plant Pathologist at Iowa State University (ISU). He is also the coordinator of the ISU Integrated Pest Management (IPM) Program. Daren received his B.S. from the University of Wisconsin-Madison in 1996 and his M.S. and Ph.D. in Plan...